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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,649	06/09/2005	Antero Irri	0101/0023	3111
21395	7590	10/06/2006	EXAMINER	
LOUIS WOO LAW OFFICE OF LOUIS WOO 717 NORTH FAYETTE STREET ALEXANDRIA, VA 22314			MASINICK, MICHAEL D	
			ART UNIT	PAPER NUMBER
			2125	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/517,649	IRRI ET AL.	
	Examiner	Art Unit	
	Michael D. Masinick	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/13/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-10 are pending in this application. This is the first office action on the merits. While not a requirement, examiner would prefer that the drawing numbers be removed from the claims to simplify the readability thereof.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Regarding claims 1-10, the phrases "or the like", "or in a corresponding manner", "i.e.", and "or other properties" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). These phrases are prevalent in claim 1 and also present in claim 9. All claims are further treated as best understood by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,185,476 to Sakai in view of U.S. Patent No. 5,969,973 to Bourne et al.

5. Referring to independent claim 1, Sakai shows a method in the control of a press brake cell formed by a numerically controlled press brake (6) and one or more robots (9) serving the same, which method comprises at least the following steps: a first step (101) to store sheet parameters representing the material, original dimensions or other properties of the sheet to be machined in the press brake cell, as well as bending parameters representing the bendings to which the sheet is subjected in the press brake (6) (Column 1, lines 50-53), a second step (102), in which the parameters stored in the first step (101) are utilized to define the bending order, i.e. the optimized order of bendings of the sheet in the press brake (6), by simulating the bending procedure or in a corresponding manner ("bending plan" – column 2, line 22), a third step (103), in which the information obtained from the first (101) and second (102) steps is stored as a provisional result in a data format which is preferably selected to make a graphic representation of the bending operation possible (Column 2, lines 15-17), a fourth step (104), in which the provisional result stored in the third step (103) is converted to a bending program (100) for the numerical control (1000) of the press brake (6), or the like (Column 2, lines 15-17). Sakai also shows wherein the bend coordinates are shown whose origin is the sheet center ("Further, 2-D arcs may be specified by 2-D space data (e.g., CenterX, CenterY, Radius, Begin Angle, End Angle").

6. Sakai does not specifically show at least: a fifth step (105), in which the provisional result of the third step (103) and/or the bending program (100) of the fourth step (104) is analyzed to compile a bend line table (BLT), which table indicates, for the bendings to which the sheet is

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subjected in the press brake (6), the bend lines, and a sixth step (106), in which the bend line table (BLT) is set to be used as a variable for movement programs (200), or the like, for one or more robots (9) serving the press brake (6), or the like.

7. Bourne shows a fifth step (105), in which the provisional result of the third step (103) and/or the bending program (100) of the fourth step (104) is analyzed to compile a bend line table (BLT), which table indicates, for the bendings to which the sheet is subjected in the press brake (6), the bend lines (Column 16, lines 30-36), and a sixth step (106), in which the bend line table (BLT) is set to be used as a variable for movement programs (200), or the like, for one or more robots (9) serving the press brake (6), or the like (Columns 16-18).

8. It would have been obvious to one of ordinary skill at the time the invention was made to use the bending table (plan) of Bourne in the press brake bending system of Sakai because Bourne can take a CAD drawing of the part and convert it directly into machine language to control the tools for creating the part. Sakai provides such a CAD drawing as well.

9. Referring to claim 2, Bourne shows that the sheet centre (AKP) is selected to be the centre of a sheet square, which sheet square refers to the smallest possible two-dimensional quadrangle inside which the sheet to be machined fits. Bourne shows the maximization of cost savings when planning all sheet cuts, punches, and bends. It would have been obvious to one of ordinary skill the plan for the minimum amount of excess material by choosing the smallest possible two-dimensional quadrangle inside which the sheet to be machined fits for cost savings reasons.

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10. Referring to claim 3, Bourne shows that the bend line table (BLT) indicates following data for each successive bend line in the bending order: side (A, B, C, D) of the sheet square subjected to said bending (Columns 27 and 28 – bend 1-4).

11. Referring to claim 4, Bourne shows that the bend line table (BLT) indicates one or more of the following data for each successive bend line in the bending order: distance between the sheet centre (AKP) and the centre of said bend line in the X-direction of the coordinate system (X, Y, Z), distance between the sheet centre (AKP) and the centre of said bend line in the Y-direction of the coordinate system (X, Y, Z), length of said bend line, length of the edge to be bent, angle to be bent (Figure 15A), rotation of said bend line around the Z-axis, position in the direction of the tools (11, 12) of the press brake (6), to which the centre of said bend line should be brought.

12. Referring to claim 5, Bourne shows that the total number of gripping points, or grips of the sheet by one or more robots (9) manipulating the sheet, is minimized by planning a single gripping point for the sheet in such a way that said gripping point can be preferably used to perform several successive bendings corresponding to the bend line (Column 17, lines 10-16).

13. Referring to claim 6 and 7, Bourne shows that when the robot (9) holds on to the sheet during the bending, the coordinate system (X, Y, Z) is transferred and/or turned along with the work movement bending the sheet, and the robot (9) is simultaneously moved in the coordinates changing in this way towards the point corresponding to the starting moment of the bending (Figure 55, “bend follow”). Examiner notes that claim 7 likely contains allowable subject matter, but the metes and bounds of the claim need to be set more firmly before this can be established.

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14. Referring to claim 8, Bourne shows that the robot (9) changes its grip from one gripping point to another when the sheet is in the grip between the tools (11, 12) of the press brake (column 17, line 17 – “repositioning gripper”).

15. Referring to claim 9, Bourne show that the first (101), second (102), third (-103) and fourth (104) steps of the method are taken in the numerical control (1000) of the press brake (6), or the like, and the fifth (105) and sixth (106) steps of the method are taken in the numerical controller (2000) of the robot or robots (9), or the like (Column 3, lines 48-60). Examiner notes that this claim is written in a confusing manner and may have antecedent basis issues with “the numerical controller” as this term is not previously used. Appropriate correction is required.

16. Referring to claim 10, Sakai shows that the degree of automation of the movement program (200) controlling the robot (9) is set by the operator (Columns 1 and 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Masinick whose telephone number is (571) 272-3746. The examiner can normally be reached on Mon-Fri, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Leo Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'MDM', is positioned above the printed name.

Michael D Masinick
Examiner
Art Unit 2125

MDM, September 26th, 2006